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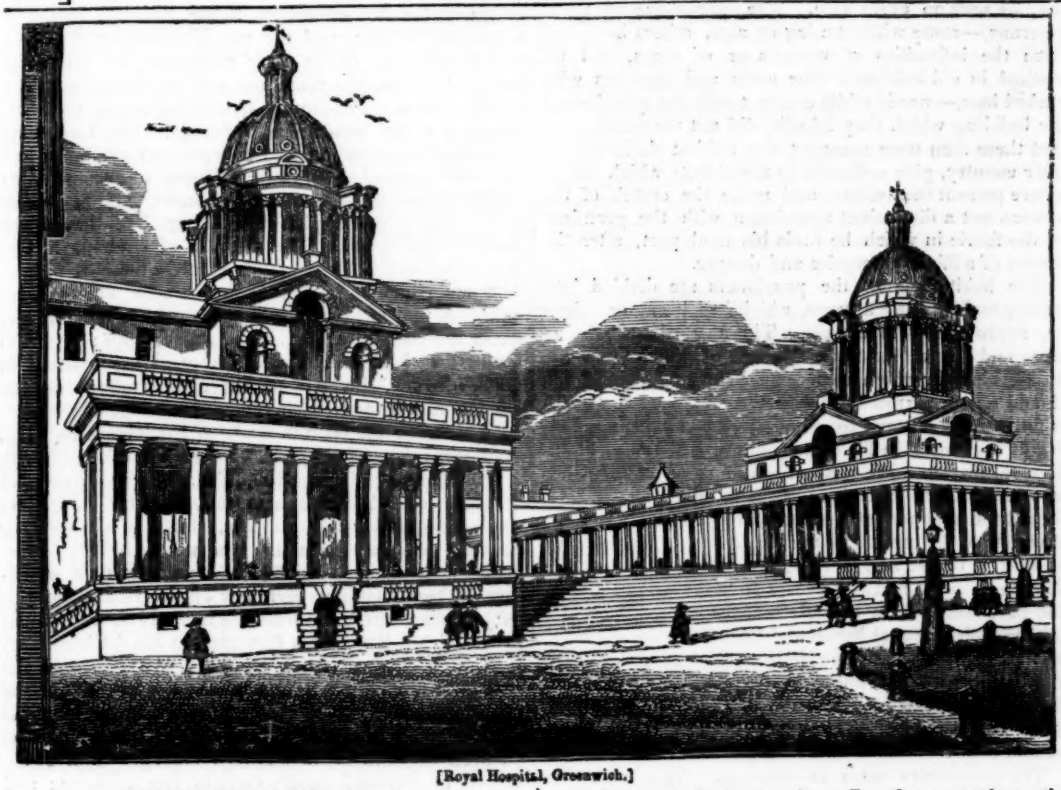

[Royal Hospital, Greenwich.]

HOLIDAY WALKS.—No. 2.

GREENWICH.

THE walk to Greenwich is not the most attractive of the walks in the environs of London. It is almost a continued street from each of the bridges; and though the road is wide, and the houses occasionally pretty, the holiday-maker may become impatient for the green fields, and weary of the bustle from which he appears unable to escape. The best mode of visiting Greenwich is by water. For two shillings and sixpence, four persons may take a boat at London Bridge and be landed close to the Royal Hospital; and every day, except Sunday, passage-boats are constantly plying at Tower Stairs, by which passengers are taken for sixpence each. The Thames, covered with the vessels of all nations, may fitly prepare the mind for visiting the palace of those veterans who have sailed under the British flag during many a year of tempest and of battle. Now you will pass alongside the hulk of some immense ship, destined to be broken up, of whose former pride the waterman will tell you some stirring tales, and you may think of these fine lines of Campbell, which stir the heart "as with a trumpet:"—

> "Britannia needs no bulwark,
> No towers along the steep;
> Her march is o'er the mountain waves,
> Her home is on the deep."

Again, some steam-vessel from Boulogne, or Hamburgh, or the Rhine, will sweep by, heaving the wave all around in its impetuous course;—and you may reflect how much nobler are the triumphs of peace than those of war, and that the unbounded commerce of England is a better thing for herself and the world than even her proudest victories. In the meantime, the domes and colonnades of Greenwich will rise from the shore, and impress your mind with a magnificence of which the architecture of England presents few examples;—and you will feel an honest pride when you know that few of the great ones of the earth possess palaces to be compared with the splendour of this pile, which the gratitude of our nation has assigned as the retreat of its wounded and worn-out sailors.

When you land, you will not indeed realize the poetical rapture of Dr. Johnson—you will not literally exclaim,

> "Struck with the seat which gave Eliza birth,
> I kneel and kiss the consecrated earth:"

but you may recollect, with reverence, that Greenwich was a favoured place of this Queen. It was here that Elizabeth might daily behold the real strength of her island empire; and here, as her navy sailed beneath her palace-walls, she might bestow upon her fleets that encouragement which, under the blessing of God, enabled her to effect the destruction of that "*Invincible* Armada," vainly destined, by the ambition of a haughty king, to make England

> "Lie at the proud foot of a conqueror."

The greater part of the buildings of the Royal Hospital of Greenwich are stone; the architecture is of the Roman character, rather plain in its general details, but acquiring great features of magnificence from its large dimensions, from the material of which it is executed, from its porticoes, its splendid domes, and its long colonnades. The whole of the buildings are open to the river. On a fine day, the old pensioners may be seen standing about in groupes, or taking a solitary walk in

the courts of the Hospital, or intent upon some book of devotion, or of inspiring adventures. In the beautiful adjoining park they appear to find much delight in rambling; and many of them establish themselves on some green knoll, provided with a telescope, the wonders of which they exhibit to strangers, and point out, with all the talkativeness of age, the remarkable objects which may be seen on every side. The appearance of these veterans,—some without a leg or arm, others hobbling from the infirmities of wounds or of years, and all clothed in old-fashioned blue coats and breeches with cocked hats,—would oddly contrast with the splendour of the building which they inhabit, did not the recollection that these men were amongst the noblest defenders of their country, give a dignity to the objects which everywhere present themselves, and make the crutch of the veteran not a discordant association with the grandeur of the fabric in which he finds his final port, after the storms of a life of enterprise and danger.

The habitations of the pensioners are divided into wards, each bearing a name, which has been, or might be, appropriated to a ship. These wards consist of large and airy rooms, on either side of which there are little cabins, in which each man has his bed. If you should obtain permission to go through a ward (which is not usually allowed to strangers), you will see how deeply implanted in the human breast is the love of individual property. Every cabin has some convenience or ornament, the exclusive possession of its tenant; and these little appendages lead one to speculate upon the character of the man to whom they belong. In one may be seen a ballad and a ludicrous print; in another a Christmas carol and a Bible. In large communities, and particularly in a collegiate life, men must greatly subdue their personal habits and feelings to the character of their society; but the individuality of the human mind will still predominate, and will display itself in a thousand little particulars, each of which would furnish to the accurate inquirer an increased knowledge of the human heart.

The pensioners mess in common. They assemble for their Sabbath devotions in the Chapel of the Hospital, a modern building, perhaps the most splendid and most tasteful in its decorations of any place of worship in the kingdom. It has not, however, the simplicity and soberness of a temple of the Most High; and the elaborate nature of its ornaments appears particularly unsuited to the character of its congregation. The "Painted Hall," a noble room opposite the chapel, is now a gallery of naval portraits and of sea-fights. It contains some fine pictures, arranged with great taste. The idea was a happy one*.

It is said, by those who intimately know the habits of the old pensioners, that they are not generally happy. They are provided with every comfort, they are treated with every kindness, they have no laborious duties imposed upon them; but they have nothing to hope or to fear—they want employment—they are alone in a crowd—they have no wife or child to partake their pleasures or soothe their pains—they are friendless amongst multitudes—the heart is desolate in the midst of worldly comfort. These circumstances arise from an essential property of our nature, and no care to make these poor men happy would overcome the undeviating laws of human feeling. Happiness does not wholly depend upon outward circumstances; but if the Greenwich pensioners could be brought impartially to exhibit the degrees of happiness which prevail amongst them, we should find that he was most happy who was laying by the greater portion of his little pittance for a heart that he loved, and was building up his own happiness by a preparation for eternity; while he was most miserable who was most exempt, in the common acceptation, from care, and who acquired as much passing gratification as his situation could reach.

* The pictures of this gallery are now being engraved, and are published periodically, with biographies, by Mr. Locker, one of the Commissioners of the Hospital.

STATISTICAL NOTES.

ENGLAND AND WALES (CONTINUED).

(14.)—THERE has never been in England any *national* provision for the education of the people. The free Grammar Schools, and the two Universities of Oxford and Cambridge, derive their revenues, not from the nation, but from the munificence of the individuals who founded them. No country rivals England in the magnificence of her academical buildings. The University of Oxford contains nineteen colleges and five halls, and that of Cambridge thirteen colleges and four halls; whilst the universities on the Continent seldom possess more than a single pile of building, like that of the London University. The number of students in Oxford and Cambridge together exceeds three thousand. The endowments of the Colleges arise chiefly from land. A part of their funds usually goes to the students under the name of exhibitions or scholarships; a part to the head and fellows; and a further part, consisting in church livings, devolves on the clerical fellows in succession, and leads to their removal from the University. According to the returns made to Parliament in 1818, there were then in England 4,167 endowed schools with a revenue amounting to 300,525*l.*; 14,282 unendowed schools; and 5,162 Sunday-schools. By means of these schools 644,282 children, chiefly of the working classes, received instruction; of whom 322,518 were taught gratuitously, and 321,764 paid for their education. There have not been any official returns on this subject since 1818, but from the answers to the circular letters of Mr. Brougham (the present Lord Chancellor) in 1828, it was estimated that in 1829 there could not be less than a million and a half of the children of the humbler classes who were then receiving in England the advantages of education. Now the number of children of both sexes between the ages of five and twelve in England hardly exceeds two millions; and deducting the number which may be presumed to be taught in the higher schools, a reasonable hope may be entertained that no very large portion of the children of the working classes are now wanting the means of instruction. Still, that instruction is in many respects so deficient, and there are so many parishes yet without schools, that there is great need of exertions for the diffusion of education, notwithstanding all that has yet been done.

(15.)—The soil of England is suited to a great variety of products. It has not the exuberant fertility of southern climates, but the quantity of moisture makes it well adapted to pasture. Those who have visited the Continent, and have witnessed the parched and arid state of the richest plains in the months of autumn are much struck with this verdure, which an American writer has called the *greenth* of England. The best husbandry, as in Scotland, is in the east parts of England, particularly in Norfolk and Northumberland. The deposits of coals and metals are in the northern and western districts, particularly in Durham, Westmorland, Lancashire, Shropshire, Worcestershire, North and South Wales, Devon, and Cornwall. In Lincoln and Cambridgeshire much improvement has lately been made by draining, and the fens in those counties are well adapted to oats. Norfolk is famous for barley; Leicestershire is the first of the grazing counties; Herefordshire is remarkable for orchards; and Worcestershire and Kent for hops.

(16.)—The following Table, made by Mr. Comber, some years ago, gives the results of his computation of the extent of land in cultivation in England and Wales. Without relying implicitly on its exactness, it

may be followed as a guide to the present state of things, in default of more recent or correct estimates. The extent of hop, nursery, garden, and pleasure grounds, appear in particular to be under-rated.

	Acres.
Wheat	3,300,000
Barley and Rye	1,000,000
Oats and Beans	3,000,000
Clover, Rye-grass, &c.	1,200,000
Roots and Cabbages, cultivated by the plough	1,200,000
Fallow	2,300,000
Hop-grounds	34,000
Nursery-grounds	9,000
Fruit and Kitchen Gardens	41,000
Pleasure-grounds	16,000
Land depastured by Cattle	17,000,000
Hedgerows, Copses, and Woods	1,600,000
Ways, Water, &c.	1,300,000
Commons and Waste Lands	5,094,000
Total	37,094,000

(17.)—The quantity of corn raised per acre varies, of course, according to the soil. The produce of wheat on some spots amounts to 6 quarters, in others to 1½ quarter per acre; but 2½ quarters for wheat, 4 for barley, and 4½ for oats, may be stated as a fair average return. The average weight of a bushel of good English wheat is about 58 lbs.; in bad seasons it does not exceed 56 or 57, but in good years it is found to weigh from 60 to 62, and in some spots 64 lbs. It yields 43 lbs. of flour for standard wheaten bread, or 46½ lbs. for household bread. The culture of rye and buck wheat in England has, of late years been much diminished. The quantity of hops annually raised is very fluctuating, but may be computed at an annual average of 20,000,000 of pounds.

(18.)—The climate of England is that of an insular country, subject to rain, and exempt from the severity of heat or cold that is felt in similar latitudes. Westerly winds, the most prevalent of all, are one of the chief causes. All the coast of Lancashire is flat. The west coast being the most hilly and mountainous, and exposed to the Atlantic, is more rainy than the east, where the country is more level, and the expanse of adjacent water less considerable. During the six winter months, from October to March, the mean temperature of the central part of England is commonly between 42 and 43 degrees of Fahrenheit's thermometer. In December, January, and February, it is generally below 40°: in July and August 62° to 65°. The mean annual temperature, noon and night, of the central part of England, is about 50°. The greatest heat seldom exceeds 80°, and the cold of December or January is rarely below 20° or 25°. In mild situations in Devonshire and Cornwall, the winter temperature is 3, 4, and even 5 degrees higher than in London. Penzance is the spot in England least visited by severe cold. The average quantity of rain in the north-west of England, particularly in Westmorland and Lancashire, is 45, 50, and sometimes 60 inches, while the average of the kingdom at large is from 30 to 40. The prevalent winds are the west and south-west.

(19.)—The total length of the paved streets and roads in England and Wales is estimated at 20,000 miles, and that of all other roads at about 100,000 miles. The average annual expenditure thereupon may be taken at a million and a half sterling, being at the rate of 12*l.* 10*s.* per mile. In 1823, the total extent of turnpike roads *in Great Britain* was 24,531 miles, whereof the annual income was 1,214,716*l.*, and the debt 5,200,000*l.* In the same year the total length of canals in Great Britain, including those under five miles, was 2,589 miles.

(To be continued.)

INSCRIPTIONS.

Sir William Jones, describing his visit to the small Island of Johanna, near the eastern coast of Africa, says, "I surprised the natives by reading to them aloud an Arabic inscription over the gate of a mosque, and still more when I entered it, by explaining some sentences which were written very distinctly on the wall, signifying 'that the world was given us for our own edification, not for the purpose of raising sumptuous buildings; life for the discharge of moral and religious duties, not for pleasurable indulgences; wealth to be liberally bestowed, not avariciously hoarded; and learning to produce good actions, not empty disputes.' We could not," adds Sir W. Jones, "but respect the temple even of a false prophet in which we found such excellent morality."

The religion of the Mahommedans forbids their ornamenting their walls with pictures or representations of the human form; but their practice of decorating not only their places of worship, but their private houses and apartments, with religious and moral sentences, extracted from the Koran, or the writings of their philosophers, has always appeared to us a custom founded both in good taste and wisdom. If we recollect right, Miss Edgeworth, in some part of those numerous and admirable works with which she has delighted and improved the world, founds an interesting and useful story upon the effect which the simple inscription of "*waste not, want not*," over the door of a servants'-hall, had upon a child, on whose after-life that single sentence produced a permanent and most happy influence; and is it not obvious that a serious and profitable reflection might often be excited by the sight of a sentence applicable to the circumstances in which a man finds himself at the moment? Is it not more than probable that he might be encouraged to do a generous deed, or be deterred from doing a cruel or unkind one, if his eye were suddenly arrested by a strong appeal to his feeling or his understanding? It has often struck us, that not only the servants'-hall, or the nursery, the dressing-room of the fine lady, or the hall or gallery of the country house, but the tradesman's parlour and the cottager's kitchen, might be made to shed rays of moral light from their walls, by a selection of inscriptions, chosen with judgment, and arranged with taste. If it served but the purpose of turning the attention of the accidental loiterer from himself to his fellow-creatures; if a melancholy and despairing mood could be roused to a cheerful hope; if a feeling of discontent could be checked and subdued, even for the passing moment,—it would be an effect that the upholsterer has not, we suspect, often succeeded in producing. This plan was adopted by the wise and benevolent Oberlin, the pastor of Waldbach, of whose extraordinary efforts in the cause of public instruction we shall give an account in a future number.

A companion that is cheerful, and free from swearing and scurrilous discourse, is worth gold. I love such mirth as does not make friends ashamed to look upon one another next morning; nor men, that cannot well bear it, to repent the money they spend when they be warmed with drink. And take this for a rule: you may pick out such times and such companions, that you may make yourselves merrier for a little than a great deal of money; for "Tis the company and not the charge that makes the feast."—*Izaak Walton.*

When we read the lives of distinguished men in any department, we find them almost always celebrated for the amount of labour they could perform. Demosthenes, Julius Cæsar, Henry the Fourth of France, Lord Bacon, Sir Isaac Newton, Franklin, Washington, Napoleon,—different as they were in their intellectual and moral qualities,—were all renowned as hard-workers. We read how many days they could support the fatigues of a march; how early they rose; how late they watched; how many hours they spent in the field, in the cabinet, in the court; how many secretaries they kept employed; in short how hard they worked.—*Everett's Discourse.*

THE SOCIABLE GROSBEAK.

[From Vaillant's Travels. Second Series.]

I OBSERVED on the way a tree with an enormous nest of those birds to which I have given the appellation of republicans; and, as soon as I arrived at my camp, I despatched a few men, with a waggon, to bring it to me, that I might open the hive, and examine its structure in its minutest parts. When it arrived, I cut it to pieces with a hatchet, and saw that the chief portion of the structure consisted of a mass of Boshman's grass, without any mixture, but so compact and firmly basketted together as to be impenetrable to the rain. This is the commencement of the structure; and each bird builds its particular nest under this canopy. But the nests are formed only under the eaves of the canopy, the upper surface remaining void, without, however, being useless; for, as it has a projecting rim, and is a little inclined, it serves to let the rain-water run off, and preserves each little dwelling from the rain. Figure to yourself a huge irregular sloping roof, and all the eaves of which are completely covered with nests, crowded one against another, and you will have a tolerably accurate idea of these singular edifices.

Each individual nest is three or four inches in diameter, which is sufficient for the bird. But as they are all in contact with one another, around the eaves, they appear to the eye to form but one building, and are distinguishable from each other only by a little external aperture, which serves as an entrance to the nest; and even this is sometimes common to three different nests, one of which is situated at the bottom, and the other two at the sides. According to Paterson, the number of cells increasing in proportion to the increase of inhabitants, the old ones become "streets of communication, formed by line and level." No doubt, as the republic increases, the cells must be multiplied also. But it is easy to imagine that, as the augmentation can take place only at the surface, the new buildings will necessarily cover the old ones, which must therefore be abandoned.

Should these even, contrary to all probability, be able to subsist, it may be presumed that the depths of their situation, by preventing any circulation and renewal of the air, would render them so extremely hot as to be uninhabitable. But while they thus become useless, they would remain what they were before, real nests, and change neither into streets nor sleeping-rooms.

The large nest that I examined was one of the most considerable I had anywhere seen in the course of my journey, and contained three hundred and twenty inhabited cells, which, supposing a male and female to each, would form a society of six hundred and forty individuals. Such a calculation, however, would not be exact. I have met with birds among which one male is in common to several females, because the females are much more numerous than the males. The same is the case with many species, both in the environs of the Cape and in the colony; but it is particularly so among the republicans. Whenever I have fired at a flock of these birds, I have always shot four times as many females as males.

NATIONAL GALLERY.—No. 2.

IN order to form a correct judgment of a picture, it is necessary to bear in mind the school to which the master belonged; for the different schools of painting were influenced by very different views, and are appreciated for various excellences, frequently of an opposite character. The masters of the Roman and Florentine schools turned their attention almost exclusively to the merits of design: their works are recommended to us by correct and powerful drawing, grace and beauty of form, sublime conception, and well-defined expression and character. Minor attractions are neglected: if we find harmony of colour it is all we expect. The Venetian painters, on the contrary, bestowed their chief care on that branch of the art which relates to colour; and not only have they succeeded in representing nature with wonderful force and brilliancy, but by the scientific arrangement of their colours, by collecting the warm and cold tints into broad masses, by harmonious blending or judicious contrast, they have succeeded in giving an effect to their works to which the epithet fascinating may be applied without exaggeration. The works of the Roman school, doubtless, afford the finest subjects of contemplation to the enlightened connoisseur; but the charms of Venetian art so completely satisfy the eye, that we are apt to forget the absence of higher qualities which address themselves directly to the imagination, and are calculated to affect it more deeply.

TITIAN holds by universal consent the first rank in the Venetian school. Of all painters he depicted with the greatest truth the glowing and luminous character of flesh tints: he designed with so much feeling as to compensate for the absence of strict purity, and for occasional incorrectness resulting from imperfect knowledge of the anatomy of the human frame: the brilliant effect of his pictures is produced without the aid of meretricious attractions, and a simple dignity pervades them which is well suited to the grandest style of historical composition. Our National Collection boasts of three fine works of this master, and they happily afford examples of three distinct styles which he adopted at different periods of his life.

The *Bacchus and Ariadne* was an early work of Titian, painted while he was still an aspirant for fame, and to it he owed the first rise of his great reputation. It is highly and justly celebrated for the splendid effect of its colouring; and a few observations on the arrangement by which this effect is produced, may be useful to many of our readers to guide them in investigating the principles of the art of colouring as practised by the Venetian masters. The warm colours are collected into a mass near the centre of the picture by the deep-toned flesh tints, the red and yellow draperies, and the warm brown of the car and leopards. The principal mass of cold colours is formed by the blue drapery of the Ariadne, and the blue of the sea, sky, and distant landscape. In order to effect a balance between the masses, a portion of red drapery is given to the figure of Ariadne (which also serves to detach the figure from the sea), while the blue drapery on the female figure in the principal group, and the cool grey tints of the ground, connect the cold colours of the picture with the warm mass, and serve by contrast to give brilliancy to the latter: the connection is rendered more complete by the varied tints of the

trees, &c. on the right, where the different colours of the picture are diffused and blended. It is unnecessary to point out in detail the beauty of the local tints; their truth and purity cannot fail to attract the eye of the attentive observer, particularly the flesh tints, varied through every gradation of hue, from the sun-burnt satyr to the fair nymph with the tamborin. Nor are the merits of the picture confined alone to the colouring: there is great beauty in the design, although the forms are not cast in the purest mould. The jollity and recklessness of the Bacchanalian troop is represented with great spirit; the expression of the different figures, especially the sottishness of Silenus, is admirable: there is much grace in the figure of Ariadne; but what can be more exquisitely painted than the little faun, dancing along with the calf's head dangling at his heels? The picture is finished in every part with the greatest care; the flowers and weeds in the foreground, and the head of the ass, would be creditable to professed painters of flowers or animals. The landscape which forms the back-ground is admirable: the green of the distant trees, beautiful as their effect is, is perhaps exaggerated beyond "the modesty of nature;" but it is valuable as a contrast to the deep flesh colour, and the strong blue of the distance is necessary to support and carry off the green. In historical works such sacrifices to truth must be allowed for the purpose of giving increased effect to the principal object—the human figure. The painter has to accomplish the difficult task of imparting the appearance of solidity to objects drawn on a flat surface, and to convey the general effect of nature an exaggeration of parts is sometimes unavoidable. The want of a similar depth of tone in the distant landscape of the picture of the *Raising of Lazarus* by Sebastian del Piombo is apparent to the critical eye. An injury in that part of the picture has been repaired by a bungling hand: parts that are left in their pure state show that the prevailing tint of the whole distance and sky was originally of a deep blue: such strong colour was considered by the master necessary to balance the blue and green draperies, and the present spotty appearance of the picture is mainly owing to its removal.

We must defer to a future Number our observations on the remaining works of Titian, and of the other Venetian masters. A.

SINGULAR DEXTERITY OF A GOAT.

"Upon our road," (from Jerusalem to Bethlehem,) says Dr. Clarke, in his Travels, "we met an Arab with a goat, which he led about the country for exhibition, in order to gain a livelihood for itself and owner. He had taught this animal, while he accompanied its movements with a song, to mount upon little cylindrical blocks of wood, placed successively one above the other, and in shape resembling the dice-boxes belonging to a backgammon table. In this manner the goat stood, first upon the top of one cylinder, then upon the top of two, and afterwards of three, four, five, and six, until it remained balanced upon the top of them all, elevated several feet from the ground, and with its *four feet* collected upon a single point without throwing down the disjointed fabric upon which it stood. The practice is very ancient. It is also noticed by Sandys. Nothing can show more strikingly the tenacious footing possessed by this quadruped upon the jutty points and crags of rocks; and the circumstance of its ability to remain thus poised may render its appearance less surprising, as it is sometimes seen in the Alps, and in all mountainous countries, with hardly any place for its feet, upon the sides and by the brink of most tremendous precipices. The diameter of the upper cylinder, on which its feet ultimately remained until the Arab had ended his ditty, was only two inches, and the length of each cylinder was six inches."

THE WEEK.

JUNE 10.—*Whit-Sunday.* The commemoration of the feast of Pentecost.

June 11.—*Whit-Monday.* The artisans of large towns make holiday on this day, as the peasantry did of old. The superstitious observances of Whitsuntide are passed away;—and so, in a great degree, are the rustic sports, such as Aubrey has described, of "dancing, bowling, shooting at butts, the ancients sitting gravely by, looking on." The "Whitson ale" no longer flows in the church, nor are the parish spits ready to cook the fat beef for the revellers. We belong to another state of things, and in many respects a better. If the workingman, by diligence and sobriety, can have his household comforts, he need not be looking forward for the dole from the lord of the manor; and he will learn, as he acquires knowledge, that there are few pleasures which are not common to all, and which he may not enjoy every hour, as well as the proudest in the land. There is an old song which embodies this sentiment, and which will be found worth the reading, as we lie under some shady tree, and see how fresh and beautiful the earth looks under the light green mantle of the early summer.

SONG.

No glory I covet, no riches I want,
Ambition is nothing to me;
The one thing I beg of kind Heaven to grant,
Is a mind independent and free.

With passions unruffled, untainted with pride,
By reason my life let me square;
The wants of my nature are cheaply supplied,
And the rest are but folly and care.

The blessings which Providence freely has lent,
I'll justly and gratefully prize;
Whilst sweet meditation and cheerful content
Shall make me both healthful and wise.

In the pleasures the great man's possessions display
Unenvied I'll challenge my part;
For every fair object my eyes can survey,
Contributes to gladden my heart.

How vainly, through infinite trouble and strife,
The many their labours employ!
Since all that is truly delightful in life,
Is what all, if they please, may enjoy.

THE WEATHER.—No. 2.

THE instrument by which we measure the *weight* of the air is the BAROMETER. The name, which is Greek, signifies a measure of weight. It was Galileo who, more than two hundred years ago, first demonstrated that the air possessed weight, by actually weighing it. His pupil, Torricelli, in the year 1644, by a very beautiful experiment, adduced still more conclusive evidence of the same truth, and at the same time invented the barometer. Some years before, the fact that water would not mount in a common sucking pump to a greater height than that of about thirty-three feet had been submitted to the consideration of Galileo, who failed in explaining it. It occurred to Torricelli that

the reason probably was, that a column of water of that height was just equal in weight to a column of air standing on as large a base, or in other words, being of the same diameter or thickness, and reaching to the top of the atmosphere. It was the pressure of this column of air, he concluded, upon the external and exposed surface of the water, which pushed the water within the pump up to the height to which it did rise in the vacuum or empty space there; and it only failed in rising so far as thirty-four feet because that pressure, by which it was impelled, was not great enough to send it so high. But if this explanation be correct, he went on to reason, the same thing should hold in the case of any other liquid than water, with this difference, that the height to which the other liquid will rise in the vacuum should be just so much less or greater than that to which the water rises, as its weight is greater or less than that of water. If water, for instance, is pushed up thirty-three feet, mercury, which is known to be thirteen times and a half as heavy as water, should rise only about thirty inches. To try whether it was so, Torricelli took a long glass tube, close at one end, and filled it to the brim with mercury. He then inverted the tube, shutting the open end with his finger to prevent the escape of the mercury, until he plunged it into a basin full of the same liquid, when he withdrew his finger, and left the mercury in the tube to communicate freely with that in the basin. His delight must have been great, when he saw the former immediately flow out and descend from the top of the tube until it stood exactly at the height of thirty inches above the surface of the exposed liquid, as he had anticipated that it would. It was now plain that the same cause which elevated water in a vacuum to the height of thirty-three feet, elevated mercury to that of thirty inches, and as the proportion between those two heights was exactly that between the weights of the two liquids, nothing could be more evident than that the elevation of each was occasioned by the operation of some common counterbalance just equivalent to the weight of thirty-three feet of water, or of thirty inches of mercury. But the only agent which in the circumstances could by possibility operate as such counterbalance, was the column of air reaching from the exposed surface of the liquid to the summit of the atmosphere.

Some years after Torricelli had made this famous experiment, another great mathematician, Pascal, suggested another very ingenious way of confirming its result. This was to carry the tube with the mercury up to a considerable height in the air, in order to see if the elevation at which the liquid stood would be diminished with the diminished length of the counterbalancing atmospheric column. The trial was made, and succeeded perfectly. When conveyed to the tops of high buildings and of mountains, the mercury in the tube always fell in proportion to the diminution that had taken place in the weight of air pressing upon it from without, and by which alone it was held up. But it was not till some time after this that the contrivance was used as a weather-glass. It was applied to this purpose on occasion of a new discovery being made, namely, that the weight of the atmosphere was not, as had been at first taken for granted, always the same at the same level, but that, even when the tube was not removed to any higher station, the height to which the liquid stood in it fluctuated considerably from time to time. This showed that the weight of the atmosphere at any particular spot on the earth's surface was itself subject to variation. Observation soon discovered that the changes in the height of the barometrical column were generally followed by changes in the weather; the former, accordingly, came to be referred to as prophetic of the latter; and from that time the instrument assumed quite a new character and value.

It affords a striking evidence of the difficulty of this subject, that even up to the present day, scientific inquirers are not agreed as to the manner in which these changes, that undoubtedly take place in the weight of the atmosphere and are indicated by the barometer, are actually effected. Many successive theories, or attempts to account for the phenomena, have been proposed and refuted; nor have even the latest writers who have treated of the matter ventured to do more than merely to offer what seems to them the most plausible guess at a true hypothesis. Those who would study the most able and elaborate investigation of the whole subject that has yet appeared, are referred to Mr. Daniell's Meteorological Essays. Here we can only briefly point out the general principle upon which the changes in question depend.

There can be no doubt that the primary agent in the production of these atmospheric fluctuations is heat. This influence, from various causes, is very unequally distributed over the different parts both of the earth and of the air, and in the same place is much greater at one time than it is at another. Heat may affect the weight of a portion of the atmosphere by expanding its volume, or in other words by causing the same number of airy particles (that is the same weight of air) to occupy more space. When this spreading takes place in the air over any particular part of the earth's surface, the diminished pressure on the exposed portion of the mercury in a barometer will of course be shown by the diminished elevation of that in the tube. But it will occasion other effects also in the air itself. The more condensed air from distant places will soon begin to rush with more or less violence towards the situation of diminished pressure. In other words, wind will occur. But the increase of heat has been in the mean time also occasioning a more rapid and plentiful evaporation of moisture from the earth, which rising into the air in the form of an invisible vapour, has of course produced more than the usual accumulation there, and is therefore ready to fall again to the earth as soon as the reduction of temperature takes place. Hence, in such circumstances, the occurrence sometimes of mist or dew, at other times of rain, or snow, or hail. The process, in short, is this;—the heat, operating upon the air, dilates it, diminishes its weight, and consequently lowers the mercury in the barometer; operating upon the terrestrial moisture, raises it by evaporation into the air, which consequently soon becomes charged with more than its usual quantity of humidity. Then come the wind, the fall of temperature, and the rain, in the manner we have already described. A fall in the barometer, accordingly, is found by experience to be in general indicative of all these coming changes.

It will be evident, however, even from this general explanation, that it is the rise or fall of the mercury, and not the mere height at which it actually stands, that is to be principally attended to in interpreting the prognostications of the instrument. For this reason the words, *fair*, *rain*, *stormy*, &c. which are written over against particular degrees on the attached scale, are more likely to deceive than to guide an inexperienced or uninstructed observer. The thing to attend to is whether the mercury has changed its elevation or exhibits any tendency to do so. Its tendency to rise or fall, even when it has not actually moved, may sometimes be detected by gently tapping the glass with the finger, which will leave it more at liberty to play, by severing it from any slight adhesion to the glass.

Besides the common barometer, there are others made in different forms, with the view of affording more convenient or more perfect indications, or of adaptation to particular circumstances. In the common barometer, consisting of a straight glass tube in which the mercury moves, with a graduated scale fixed alongside of it, the index is necessarily limited to the mere extent of the

actual range of the mercury, which rarely exceeds three inches. In order to obtain an index of greater length, and therefore more minutely divisible, what is called the wheel barometer has been contrived, in which the indications are made by a hand like that of a clock moving round a circle, and obeying a thread connecting it with a little float which rests on the exposed surface of the mercury. When a barometer is constructed to be used on shipboard, it is made with one part of the tube contracted to a very narrow bore, so as to prevent the enclosed liquid from being disturbed by the heaving of the ship. Dr. Arnott, in his 'Elements of Physics,' relates an anecdote strikingly illustrative of the value of this instrument. "To the husbandman," he says, "the barometer is of considerable use, by aiding and correcting the prognostics of the weather which he draws from local signs familiar to him; but its great use as a weather-glass seems to be to the mariner, who roams over the whole ocean, and is often under skies and climates altogether new to him. The watchful captain of the present day, trusting to this extraordinary monitor, is frequently enabled to take in sail and to make ready for the storm, where in former times the dreadful visitation would have fallen upon him unprepared. The marine barometer has not yet been in general use for many years, and the author was one of a numerous crew who probably owed their preservation to its almost miraculous warning. It was in a southern latitude. The sun had just set with placid appearance, closing a beautiful afternoon, and the usual mirth of the evening watch was proceeding, when the captain's order came to prepare with all haste for a storm. The barometer had begun to fall with appalling rapidity. As yet the oldest sailors had not perceived even a threatening in the sky, and were surprised at the extent and hurry of the preparations; but the required measures were not completed, when a more awful hurricane burst upon them than the most experienced had ever braved. Nothing could withstand it; the sails already furled and closely bound to the yards were riven away in tatters; even the bare yards and masts were in great part disabled; and at one time the whole rigging had nearly fallen by the board. Such for a few hours was the mingled roar of the hurricane above, of the waves around, and of the incessant peals of thunder, that no human voice could be heard, and amidst the general consternation even the trumpet sounded in vain. In that awful night, but for the little tube of mercury which had given the warning, neither the strength of the noble ship, nor the skill and energies of the commander, could have saved one man to tell the tale. On the following morning the wind was again at rest, but the ship lay upon the yet heaving waves, an unsightly wreck."

REAL HEROISM.

Madame de Genlis, in one of her interesting works for youth, gives a touching example of the gratitude of a young female servant who, after the death of her mistress, devoted herself to the accomplishment of a design which that lady had formed, but which death prevented her carrying into execution.

This young person, the offspring of poor parents, had been left an orphan at an early age. Mrs. S. took compassion upon her, received her into her house, and gave her a useful education, so that she was soon capable of becoming her servant. This beneficent lady was far from rich, yet she devoted herself to the improvement of the condition of her poorer neighbours. She formed the plan of founding a school for female children, and began to save, out of her small income, a sum sufficient for its establishment. Whilst occupied with this intention, she was seized with a dangerous illness—she felt that her end was near, and she lamented to her young attendant that the design she had formed must now fail—that she should die—and there would be no school. Her words proved true; she died, and with her, apparently, terminated this fondly cherished plan.

We will not dwell on the grief of the poor young woman thus suddenly deprived of her early friend. Better thoughts than those of lamentation filled her mind, and raised it above the consideration of self.

She left the village, and entered into a new service, and by the continued practice of the most rigid economy, succeeded, at the end of three years, in acquiring the sum necessary to found the school her mistress had been so anxious to establish. The circumstances here narrated took place in France, where less money was requisite for such an undertaking than would be required in England. Fifty crowns was the sum amassed by this heroic girl, through the means of industry and the practice of self-denial.

She wrote to the clergyman of the village, enclosing her little savings, begging him to carry into execution the wishes of her deceased mistress, with which he had been made acquainted; adding that she should herself have been the bearer of the money, but that she had not sufficient left to defray the expenses of the journey.

SOME RECOLLECTIONS OF FERDINAND KING OF NAPLES.

The late King Ferdinand of Naples, so well known as the Lazaroni Monarch, and as one of the most illiterate, indolent, and careless men of Europe, was all his life so devoted to the pleasures of the chase, that he can hardly be said to have thought of anything else. When the French armies were a second time approaching his frontiers, to drive him a second time from his beautiful kingdom, a grand council was assembled at Portici, to deliberate on what was to be done in so tremendous a crisis. His Queen, Caroline of Austria, (sister to Marie-Antoinette of France,) who was as active as her Consort was indolent, always presided at the council table. This day, as might be expected, in face of such danger, the deliberations were serious and long. The King became impatient; and, after looking several times out of the window at the weather, which was favourable for some sport, he rose, and thus delivered himself, "Caroline, what are we to do? If we are to run away, let us run; but if we are to stay, tell me, that I may go shooting!"

At a later period, when he had no wife to transact business for him, he would invariably quit the council, no matter how important and urgent the matters in discussion, as soon as he heard the clock strike twelve, which was his dinner hour, usually saying to his ministers as he rose, "Gentlemen, my maccaroni will be getting cold!"

A few weeks before his death I had the honour of an audience with King Ferdinand at his magnificent palace of Caserta. The object of this was to present some papers containing important representations about the trade of Messina, and as he was known never to read what was put into his hands, I was instructed to inform him by word of mouth, as to the contents of these papers. He received me very condescendingly, I might almost say kindly, and listened for a minute or two with tolerable attention. But all at once, my name, which had been given in writing by the Chamberlain who procured me the audience, flashed across his Majesty's mind, and, cutting me short in my story about the free-port of Messina and the rights assured to the foreign merchants, he asked me if I was any relation to General ———, who had been with our army in Sicily during the French occupation of Naples. On my replying that I had not the honour of any such relationship, his Majesty said, "Ah! he was an excellent man! Such a shot! such a shot!" and having once got on his darling subject, I fancied I saw that he was thinking more of it than of what I was telling him. He however heard me out, and, I believe, would have done what had been asked of him, had he not died so soon after. He was then just going off to shoot in the woods near the Favorita. When I entered the room I was nearly upset by a couple

of huge Spanish pointers that ran between my legs; and, during the conversation, these favourite companions further disturbed me by jumping up in front of me, and (one of them) by leaping on his Majesty's bed, which was visible in an inner room, and seemed to be nothing better than a common tent bed. The magnificent room in which I was received, boasted scarcely any furniture. The most conspicuous objects were a pair of mud boots, to be used in snipe shooting, that lay in elegant ease in one corner, two guns in another, a powder flask, a little hammer on a silk chair, and other articles of a like nature. His Majesty was dressed in a grey coat, grey waistcoat, and grey pantaloons, over which was pulled, as high as the knee, a pair of coarse brown worsted stockings, such as are generally worn by the summer Neapolitan sportsmen. During the audience his Majesty stood on one side of the room, between two windows, resting one of his hands on a marble table. I observed that his hands were coarse, hard-looking, and horny, like those of a man accustomed to hard manual labour. And undoubtedly, as far as regarded hunting, shooting, and fishing, his Majesty had worked hard enough in his time. In spite of his advanced age, he was then robust, straight, and active. Almost before I got beyond the palace gate he rolled after me in an ugly tub of a carriage, on his way to the scene of the day's sport. The next time I saw him, he was lying in state!

Ferdinand had borne the ups and downs of his royal career (and they had been enough to kill a prouder or more susceptible sovereign) with wonderful equanimity. He had never permitted them to interrupt his sleep, his appetite, his favourite sports, and his roaring laughs. I have often heard him, even when things were none of the smoothest with him—or rather with his kingdom—laugh as loud and as long as any lazzarone in Naples. He must almost have died with the thoughts of wild boars and wild ducks, dogs, guns, and "good shots" in his head. For, in January, 1824, after he had been confined a few days with a cold, he felt himself better one evening, and made arrangements for a shooting excursion the following day at the Lake di Patria. He went to bed in excellent spirits, and early, as he was always accustomed to do; but the next morning he did not summon his attendant early, as was also his wont. Everything was ready for the departure of the sportsmen; Don D———, Don G———, and others of his favourites were waiting. At length the door of the royal chamber was opened, and his Majesty was found cold dead! One of his hands was thrown a little over the side of his low camp bed, as though he had been endeavouring to rise; there were no signs of suffering on his countenance. Apoplexy had despatched him in the quickest and quietest way possible. He was approaching his eightieth year.

The faults of Ferdinand were mainly, if not entirely, attributable to the bad education he had received, and to the country in which he lived. His natural talents were good, but they had never been cultivated. Occasionally, when he could relieve himself from his habitual indolence and indifference, he could think very justly and act with energy. He was a wit too in his way, and said many droll things. After his last return from Sicily, when Joachim Murat had been driven out of the kingdom of Naples by the Austrians, General Nugent, the Minister of War, waited on Ferdinand one day, with some cuirasses as specimens of that armour, with which the General thought of furnishing one of the regiments of the new Neapolitan army he was then organizing. The King approved of the specimens, but asked the General, with a smile, what part of the soldiers' bodies they were meant to cover? The General replied, of course the breast. "Then are they of no use to my brave maccaroni eaters!" cried the King; "my soldiers are not likely to expose their fronts—no, no! General! reverse them; put them behind! put them behind!" and then he roared with laughter at his own witticism and the notorious cowardice of his own troops. M.

THE GLADNESS OF NATURE.

Is this a time to be cloudy and sad,
When our mother Nature laughs around;
When even the deep blue heavens look glad,
And gladness breathes from the blossoming ground?

There are notes of joy from the hang-bird and wren,
And the gossip of swallows through all the sky;
The ground-squirrel gaily chirps by his den,
And the wilding bee hums merrily by.

The clouds are at play in the azure space,
And their shadows at play on the bright green vale,
And here they stretch to the frolic chase,
And there they roll on the easy gale.

There's a dance of leaves in that aspen bower,
There's a titter of winds in that beechen tree,
There's a smile on the fruit, and a smile on the flower,
And a laugh from the brook that runs to the sea.

And look at the broad-faced sun how he smiles
On the dewy earth that smiles in his ray,
On the leaping waters and gay young isles,
Ay, look, and he'll smile thy gloom away.

*** The above lines are from the Poems of William Cullen Bryant, an American, which we shall review in our next Supplement.

The largest Flower, and the largest Bird.—In 1818, Doctor Arnold discovered in the island of Sumatra a flower which he named the *Rafflesia Arnoldi*, and which an author has called with much justice "the magnificent Titan of the vegetable kingdom." The human mind indeed had never conceived such a flower: the circumference of the full expanded flower is *nine feet*,—its nectarium calculated to hold nine pints,—the pistils are as large as cows' horns, and the entire weight of the blossom computed to be 15 lbs.

Temple, in his recent Travels in Peru, states that he shot a condor, and, from notes taken on the spot, gives us the following dimensions of its size: "When the wings are spread, they measure forty feet in extent, from point to point; the feathers are twenty feet in length, and the quill part eight inches in circumference."

This almost realizes the fabled *roc* of Sinbad in the 'Arabian Nights;' but its dimensions, as here given, rest on good and very recent authority.

Responsibility of Drunkards.—It is a maxim in legal practice, that those who presume to commit crimes when drunk must submit to punishment when sober. This state of the law is not peculiar to modern times. In ancient Greece, it was decreed by Pittacus, that he who committed a crime when intoxicated should receive a double punishment, viz., one for the crime itself, and the other for the ebriety which prompted him to commit it. The Athenians not only punished offences done in drunkenness with increased severity, but, by an enactment of Solon, inebriation in a magistrate was made capital. In our own country, at the present time, acts of violence committed under its influence, are held to be aggravated, rather than otherwise; nor can the person bring it forward as an extenuation of any folly or misdemeanour which he may chance to commit. A bond signed in intoxication holds in law, and is perfectly binding, unless it can be shown that the person who signed it was inebriated by the collusion or contrivance of those to whom the bond was given.—*Anatomy of Drunkenness.*

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